



OPTIMIZING THE PERFORMANCE OF CUSTOMIZED BICYCLE SADDLES WITH BASF FORWARD AM, HP, AND AMT POSTPRO

SUMMARY

AMT is no stranger to utilization in anatomically customizable sports applications. 3D printed sports applications can dramatically improve an athlete's comfort, performance, and health. With this knowledge in mind, the Czech bicycle component manufacturer Posedla chose to implement additive manufacturing to create their revolutionary bicycle saddles.

With the goal of creating optimized bicycle saddles, Posedla drew on the experience and expertise of companies dedicated to additive manufacturing. Using the individual characteristics of each rider, Posedla produces fully customized saddles tailored to the rider's anatomy, as well as riding form, flexibility, and more. To do this, a test kit is sent to the user from which information and impressions are gathered to create a three-dimensional model of the saddle through algorithmic modeling software. Production of the saddle begins with HP's Muli Jet Fusion print technology, and BASF 3D Printing Solutions material brand Forward AM Utrasint® TPU01 flexible polymer. Production of the saddle is then finalized with the crucial post processing step utilizing AMT PostPro.

BENEFITS OF AMT POSTPRO

AMT is known for automated post processing systems that enable the certification of parts for use in the most demanding industries. In the case of 3D printed saddles for Posedla, AMT PostPro surface finishing technology was the premier option. This post processing method seals the porous surface of the saddle, reinforcing its mechanical and structural properties while giving it an injection molded-like finish. As a result, BASF Forward AM's Utrasint® TPU01 material was able to pass skin contact and irritation testing. End-use parts were also tested for mechanical damage and fatigue to meet and even exceed ISO standards for bicycle saddles.

The team from Posedla noted that "the level of customization we offer in our product would be otherwise impossible to achieve" without the implementation of additive manufacturing. As for the manufacturing process, they say they have managed to reduce the production time from 10 weeks to 3 weeks, with the manufacturing plant at full capacity. In addition, there has been a significant reduction in the weight of the product, which now stands at less than 140 grams. Posedla is now far more competitive in the bicycle equipment market thanks to the collaboration with BASF Forward AM, HP, and AMT PostPro.

